

-
- Standley, P. C. 1927. *Alfaroa*, a new genus of trees of the family Juglandaceae from Costa Rica. *J. Washington Acad. Sci.* 17: 77–79.
- Stone, D. E. 1968. A new species of *Alfaroa* from Mexico. *Amer. J. Bot.* 55: 477–484.
- . 1972. New World Juglandaceae, III. A new perspective of the tropical members with winged fruits. *Ann. Missouri Bot. Gard.* 59: 297–321.
- . 1973. Patterns in the evolution of amentiferous fruits. *Brittonia* 25: 371–384.
- . 1977. Juglandaceae. In W. Burger (editor), *Flora Costaricensis*. *Fieldiana, Bot.* 40: 28–53.
- . In press. Juglandaceae. In G. Davidse, M. Sousa S. & A. O. Chater (editors), *Flora Mesoamericana*. Universidad Nacional Autónoma de México, México, D.F.; Missouri Botanical Garden, St. Louis; The Natural History Museum, London.
- , S.-H. Oh, E. A. Tripp, L. E. Ríos G. & P. S. Manos. 2009. Natural history, distribution, phylogenetic relationships, and conservation of Central American black walnuts (*Juglans* sect. *Rhysocaryon*). *J. Torrey Bot. Soc.* 136: 1–25.
- Williams, L. O. & A. Molina R. 1970. The Juglandaceae of Guatemala. *Fieldiana, Bot.* 32: 207–209.

Nomenclatural Novelties and Lectotypifications in Gymnomitriaceae

Jiří Váňa

Department of Botany, Charles University, Benátská 2, CZ-128 01 Praha 2, Czech Republic.
vana@natur.cuni.cz

Lars Söderström

Department of Biology, Norwegian University of Science and Technology, N-7491 Trondheim,
Norway. Author for correspondence: lars.soderstrom@bio.ntnu.no

Anders Hagborg and Matt von Konrat

Department of Botany, The Field Museum, 1400 South Lake Shore Drive, Chicago,
Illinois 60605-2496, U.S.A. hagborg@pobox.com; mvonkonrat@fieldmuseum.org

ABSTRACT. Anticipating the forthcoming first-ever published synthesis of the taxonomy, systematics, and nomenclature of the liverwort family Gymnomitriaceae H. Klinggr., where almost 800 names are treated in detail, we here provide 10 nomenclatural actions. Four new combinations are made: *Gymnomitrium bolivianum* (Steph.) Váňa, *G. minutulum* (Hässel) Váňa, *G. nigrum* (Grolle & Váňa) Váňa, and *G. subintegrum* (S. W. Arnell) Váňa. Lectotypification is presented for the following six names: *Acolea brevissima* Schleich. ex Dumort., *G. sinense* Müll. Frib., *G. verrucosum* W. E. Nicholson, *Jungermannia sphacelata* Giesecke ex Lindenb., *J. divaricata* Sm. var. *latifolia* Lindb. ex Norrl., and *Marsupella disticha* Steph.

Key words: Gymnomitriaceae, *Gymnomitrium*, *Marsupella*.

The liverwort family Gymnomitriaceae H. Klinggr. includes some 10 genera and over 70 accepted species. The authors are anticipating the publication of the first-ever synthesis of the taxonomy, systematics, and nomenclature of the family in 2010. Significantly, the treatment includes detailed taxonomy and nomenclature for almost 800 names associated with the family. It includes accepted names, synonyms, authorities, original citations, type data, a three-level coding system to indicate the level of knowledge about a taxon, as well as auxiliary data and annotations. Noteworthy remarks on various aspects of the distribution, ecology, conservation, and biology of members of the family are also included. When compiling the taxonomic and nomenclatural data for the synopsis of Gymnomitriaceae, the authors found that some taxa needed to be transferred or validated, and other taxa required lectotypification. Instead of embedding these critical nomenclatural novelties and lectotypifications

in a larger paper that deals with over 800 names, we instead treat them here.

NEW COMBINATIONS

New combinations are required for the following names. All four taxa are treated as accepted taxa by the authors of the forthcoming treatment (Váňa et al., 2010) where full type details, citation, and synonymy are provided.

1. *Gymnomitrium bolivianum* (Steph.) Váňa, comb. nov. Basionym: *Anastrophyllum bolivianum* Steph., *Biblioth. Bot.* 87: 186. 1916. TYPE: Bolivia. Yanakaka Mtns., 4000 m, 1913, *T. Herzog 3832* (holotype, G 17213).

The older name, *Sphenolobus laceratus* Steph. (Stephani, 1902), is not available as it is blocked by *Gymnomitrium laceratum* (Steph.) Horik. (Horikawa, 1943).

2. *Gymnomitrium minutulum* (Hässel) Váňa, comb. nov. Basionym: *Marsupella minutula* Hässel, *J. Bryol.* 11: 123. 1980. TYPE: South Georgia. Bird Island, upper corrie of Roché Peak, ca. 275 m, 19 Dec. 1960, *S. W. Greene 435a* (holotype, AAS).

3. *Gymnomitrium nigrum* (Grolle & Váňa) Váňa, comb. nov. Basionym: *Marsupella nigra* Grolle & Váňa, *J. Hattori Bot. Lab.* 40: 186. 1976. TYPE: Papua New Guinea. Simbu: Mt. Wilhelm, below summit, 4400 m, 1968, *van Zanten 68-618/b* p.p. (holotype, JE; isotype, PRC). [Type specimen includes also *Marsupella subintegra* S. W. Arnell intermixed.]

4. *Gymnomitrium subintegrum* (S. W. Arnell) Váňa, comb. nov. Basionym: *Marsupella subintegra* S. W. Arnell, *Ark. Bot.*, n.s. 3(16): 545. 1956. TYPE:

Uganda. Ruwenzori, Mijusi Valley, 4000 m, on steep rock facing W near the bottom of the valley, 30 Mar. 1948, *O. Hedberg 597* (holotype, UPS).

NEW LECTOTYPES

It is apparent that lectotypification is required for the following names.

- 1. *Acolea brevissima*** Schleich. ex Dumort., Syll. Jungerm. Europ. 76. 1831. *Gymnomitrium brevissimum* (Schleich. ex Dumort.) Warnst., Hedwigia 53: 196. 1913. TYPE: Switzerland. Grand St-Bernard, “34. *J. concinnata* très petite Hooker, 20” in herb. Schleicher, [W. J.] *Hooker 20* (lectotype, designated here, LAU).

Dumortier (1831) based the species on *Jungermannia concinnata* β *minor* Schleich. Cat. exsicc. 1821 and cited it from “Habitat ad rupes in alpibus Helveticis.” As a lectotype we chose the specimen from Schleicher’s own herbarium. That specimen is annotated as isotype by R. Grolle, although he never selected a formal lectotype.

- 2. *Gymnomitrium sinense*** Müll. Frib., Rev. Bryol. Lichénol. 20: 176. 1951. TYPE: China. Yunnan: sub jugo Dokerla, 4225 m, 18 Sep. 1915, *Handel-Mazzetti 8170*, det. *G. alpinum* (lectotype, designated here, S).

Müller (1951) mentioned only one specimen for the type, but there exist isotypes in at least JE, W, and WU. We select the lectotype from Müller’s herbarium deposited in S. The isotypes in W and JE (duplicate from W) are mixed with *Apomarsupella revoluta* (Nees) R. M. Schust.

- 3. *Gymnomitrium verrucosum*** W. E. Nicholson, Symb. Sin. 5: 10. 1930. *Marsupella verrucosa* (W. E. Nicholson) Grolle, Trans. Brit. Bryol. Soc. 5: 86. 1966. *Apomarsupella verrucosa* (W. E. Nicholson) Váňa, Bryobrothera 5: 227. 1999. TYPE: China. Yunnan: NW Yunnan, “beiderseits des Passes Tschiangschel, zwischen Salwin und Irrawadi,” 3800–4050 m, 4 July 1916, *Handel-Mazzetti 9323* (lectotype, designated here, WU).

Nicholson (1930) mentioned only one specimen when describing the species. This specimen is deposited in Handel-Mazetti’s herbarium in Vienna (WU).

- 4. *Jungermannia sphacelata*** Giesecke ex Lindenb., Nova Acta Phys.-Med. Acad. Caes. Leop. Carol. Nat. Cur. 14(Suppl.): 76. 1829. *Marsupella spha-*

celata (Giesecke ex Lindenb.) Dumort., Recueil Observ. Jungerm. 24. 1835. TYPE: Greenland. s.d., *Giesecke s.n.* (lectotype, designated here, W).

Lindenberg (1829) cited specimens (syntypes) from Greenland (leg. Giesecke) and Austria (leg. Wormskiold). As he described it referring to Giesecke, we select as a lectotype the specimen collected by Giesecke and deposited in Lindenberg’s herbarium in W (isolectotype is in S).

- 5. *Jungermannia divaricata*** Sm. var. ***latifolia*** Lindb. ex Norrl., Bot. Not. 1873: 145. 1873. TYPE: Finland. Lapponia enontekiensis, “Kilpisjärvitrakten,” 1867, *Norrlin s.n.* (lectotype, designated here, H-SOL 2527003).

Norrlin (1873) cited only “Lindb. in sched.” In Lindberg’s herbarium in H, there are some specimens with the epithet “*latifolia*” labeled partly as *Cesia latifolia* Lindb., *Marsupella latifolia* Lindb., or *Nardia latifolia* Lindb. We select as a lectotype the specimen that both Norrlin and Lindberg should have seen. *Jungermannia divaricata* var. *latifolia* is a synonym of *M. boeckii* (Austin) Lindb. ex Kaal.

- 6. *Marsupella disticha*** Steph., Bull. Herb. Boiss. ser. 2, 1: 164 [Spec. Hep. 2: 25]. 1901. TYPE: Japan. Honshū: Yamagata, sommet du Kattasan, 13 July 1894, *Faurie 14116* (lectotype, designated here, G 15035).

Stephani (1901) cited several collections, “Japonia in cacumine montis Kattasan (Faurie); insula Sado (Faurie); Sendai (Faurie).” The first mentioned specimen was selected as the type [should be lectotype] by Kitagawa (1963), without specifying the herbarium. Because duplicates of these collections exist (e.g., in the herbaria FH and PC), we select the specimen from Stephani’s herbarium in G as the lectotype.

Acknowledgments. The Early Land Plants Today Project (see <http://www.early-land-plants-today.org>) project is generously supported by the Global Biological Information Facility (GBIF) Seed Money Award No. 2007-41. We also thank the Biodiversity Synthesis Center (BioSynC) at The Field Museum—a component of the Encyclopedia of Life (EOL)—which sponsored an international liverwort meeting and workshop that helped make this possible.

Literature Cited

- Dumortier, B. C. 1831. Sylloge Jungermannidearum Europae Indigenarum, earum Genera et Species Systematice Complectens. Tournay.
Horikawa, Y. 1943. Notulae Hepaticologicae. Acta Phytotax. Geobot. 13: 212–214.